Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte NOBUYOSHI IYATOMI and YASUIE MIKAMI

Appeal No. 1998-1149
Application 08/406,946

ON BRIEF

Before GARRIS, PAK and WALTZ, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal which involves claims 1, 2, 4 and 5. These are all of the claims remaining in the application.

The subject matter on appeal relates to a method for reclaiming a metal sulfate-containing waste sulfuric solution comprising the steps of extracting titanium ions from the solution with an organic solvent and subsequently subjecting the resulting solution to a diffusive dialysis treatment.

This appealed subject matter is adequately illustrated by independent claim 1 which reads as follows:

> 1. A method for reclaiming a metal sulfate-containing waste sulfuric acid solution comprising the steps of extracting titanium ions from the waste sulfuric acid solution by contacting the waste sulfuric acid solution with an organic solvent effective for extracting titanium ions from the waste sulfuric acid solution and subsequently subjecting the waste sulfuric acid solution obtained after the step of extracting to a diffusive dialysis treatment.

The references set forth below are relied upon by the examiner as evidence of obviousness:

Aoki et al. (Aoki)	EP 0 368 203	May 16, 1990
Mikami et al. (Mikami)	EP 0 541 002	May 12, 1993

All of the claims on appeal are rejected under 35 U.S.C. § 103 as being unpatentable over Aoki in view of Mikami.

For the reasons set forth below, we will sustain the rejection of independent claim 1, but not the rejection of independent claim 2 or of claims 4 and 5 which depend from claim 2.

We share the examiner’s conclusion that it would have been obvious to combine the applied reference teachings such that Aoki’s diffusion dialysis step is preceded by Mikami’s

solvent extraction step. This combination would have been motivated by

the reasonable expectation of successfully enhancing the separation and thus recovery of titanium ions from the waste sulfuric acid solution. In re O'Farrell, 853 F.2d 894, 904, 7 USPQ2d 1673, 1680-81 (Fed. Cir. 1988).[1]

We perceive little if any merit or logic in the appellants' apparent belief that the combination of Aoki's extraction step with Mikami's extraction step would not have been expected to yield enhanced separation and recovery. It is only rational to expect enhanced separation/recovery using two extraction treatments rather than one. Moreover, this is evinced by the applied prior art. For example, the paragraph bridging columns 4 and 5 of Aoki discloses subjecting his waste liquor to repeated extraction operations (see

[1]In addition, this obviousness conclusion is reinforced by the reasonable expectation that enhanced separation of titanium ions from the waste sulfuric acid solution at a point prior to the diffusive dialysis treatment would militate against precipitation of titanium oxide particles on the dialysis membrane in the final stage of Aoki's diffusion dialysis step, notwithstanding his preliminary filtration step (e.g., see lines 15-18 in column 7).

especially, lines 45-47 in column 4).

The appellants also argue that the rejection is improper because they have discovered a problem and a solution thereto which are not recognized by the applied references. As properly indicated by the examiner, however, appealed claim 1 is not limited to a method which would include such a problem/solution. In any event and perhaps more importantly, it is well settled that, as long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does not require that the references be combined for the reasons contemplated by the inventor. In re Beattie, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992). As discussed above, the reference combination here in question would have been motivated by the desire to obtain enhanced separation/recovery.

For the above stated reasons, we will sustain the examiner's § 103 rejection of appealed independent claim 1 as being unpatentable over Aoki in view Mikami.

We cannot sustain, however, the corresponding rejection of independent claim 2 and of claims 4 and 5 which depend therefrom. This is because, as the appellants have correctly pointed out, the applied references contain no teaching or suggestion of the appealed claim 2 step wherein organic solvent is contacted with the aqueous solution from the diffusive dialysis treatment to extract the alkali ions from the solvent into the aqueous phase to regenerate the organic solvent. Simply put, the examiner's obviousness conclusion regarding this step is not supported by any probative evidence. This lack of evidentiary support compels us to disagree with the examiner's conclusion of obviousness vis-a'-vis the step under consideration.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

BRADLEY R. GARRIS Administrative Patent Judge	)	
CHUNG K. PAK Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
THOMAS A. WALTZ Administrative Patent Judge	)	

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